

UNDERSTANDING COMMUNITY-BASED AQUACULTURE THROUGH PARTICIPATORY APPROACHES

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INTRODUCTION

A comprehensive analysis of village conditions will require sufficient time and resources. More often, there is not much time and resources in doing social analysis of the conditions of a community for effective community-based natural resource management. In view of this, there has been growing interest in doing rapid and participatory appraisal of rural communities for collaborative decision-making purposes.

The use of Rapid Rural Appraisal (RRA) is a research tool that is cost-effective, timely, and analytic. Rural communities throughout the world are experiencing high rates of changes in terms of life styles including the need for knowledge and updated information, training, and skills. Information change rapidly and therefore there is a need to keep up with knowledge rapidly. RRA is a tool of learning from people in order that any development intervention that will be introduced in the community will address the aspirations of the people. RRA has been developed for and can be used to generating general information on various variables, whether physical structures (farms, houses, and machines) or services such as social organization and political structures.

Participatory Rapid Appraisal (PRA) methods have evolved from Rapid Rural Appraisal (RRA). PRA emphasizes the processes which empower local people, whereas RRA is mainly seen as a means for outsiders to gather information. PRA is an approach to the analysis of local problems and the formulation of tentative solutions with local stakeholders. It makes use of a wide range of visualization methods for group-based analysis to deal with spatial and temporal aspects of social and environmental problems. It mainly deals with a community-level scale of analysis but is increasingly being used to help deal with higher level, systemic problems.

BASIC PRINCIPLES OF PRA

1. Participation – Inputs from the community into PRA activities is important to its value as a research and planning method. Participation improves chances of better collective efforts of the members of the community whether in conserving the common resources or in undertaking livelihood activities that uses the natural resources such as aquatic, land and forest.

There are advantages of using participatory approaches for rural development such as :

- increased “sense of ownership” of the project or activity;
- improved productivity and efficiency
- increased coverage of impacts;
- increase equity and self-determination;
- increased likelihood of the project continuation, maintenance as sustainability after project completion;
- increased cost-sharing and effectiveness; increased of appropriateness and relevance of the community development activity;
- fulfillment of basic needs

2. Teamwork. The PRA team should be well-balanced that it represents different but complementing and interacting disciplines in socioeconomics, culture, gender, technology, and generational perspectives. PRA is best done by a team that includes local people with perspective and knowledge of the area's conditions, traditions, and social structure and either nationals or

expatriates with a complementary mix of disciplinary backgrounds and experience. Ideally, the team should include a socio-economist, social worker, scientist (biologist, aquaculturists), technologist, policy researcher etc. Close and continuous coordination among the team members is necessary to understand the complexities of the factors affecting the success of the project on rural development.

3. Flexibility. PRA is a learning process and as such does not provide straight-forward procedures and protocols in dealing with a community. The PRA approach is flexible and uses a combination of techniques that is appropriate in a particular development context determined by variables as the size and skill mix of the PRA team, the time and resources available, and the topic and location of the work.

4. Optimal ignorance. This refers to knowing what is not worth knowing. To be efficient in terms of both time and money, PRA work intends to gather just enough information to make the necessary recommendations and decisions.

5. Triangulation. Learning from different perspectives and disciplines (at least three) is a feature of PRA. PRA explicitly seeks insights from and an understanding of the needs of different individuals and groups, which may be conflicting but will better show the complexity of local situations. PRA works with qualitative data. To ensure that information is valid and reliable, PRA teams follow the rule of thumb that at least three sources must be consulted or techniques must be used to investigate the same topics.

PRA TOOLS

PRA is an exercise in communication and transfer of knowledge. PRA employs a wide range of methods to enable people to express and share information, and to stimulate discussion and analysis. The learning-by-doing and teamwork spirit of PRA requires transparent procedures. For that reason, a series of open meetings (an initial open meeting, final meeting, and follow-up meeting) generally frame the sequence of PRA activities. Other selected tools common in PRA are:

1. Group methods:

Focus Group Discussion (FGD)

- a. FGD is discussion with selected group of four to eight community members to: i) generate information, build consensus, clarify information in documents; gather different opinions on certain issues that are lacking in details from other sources; ii) gather information on specific issues such as pollution of aquatic resources, livelihood options, socioeconomic conditions, and regulations on the use of common resources;
- b. Guidelines in designing FGDs:
 - i) Guidelines are open-ended questions by the facilitator to encourage discussion on specific issues and expression of ideas, opinion, and experiences.
 - ii) Questions are phrased in such a manner that will discover attitudes and practices in a general way.
 - iii) Guidelines should be brief
 - iv) Guidelines should provide only the opening questions and a reminder of other related issues.
- c. Outputs
 - i) Information can be used for planning, strategizing of competing profile of the community or the resource.
 - ii) Consensus or agreements on controversial issues.
 - iii) General perception of community members on important matters.

Brainstorming

- a. Brainstorming is sharing of ideas on specific issues or concerns. It encourages critic and creative thinking among the group members to understand problems and recommend solutions.
- b. Guidelines or approaches:
 - i) Set the objectives of the activity
 - ii) Determine the individuals of groups that will be involved
 - iii) Inform and discuss with community leaders details of activity and let them identify participants
 - iv) Set time, date and place of brainstorming
- c. Outputs - A set of new ideas and ways of looking at a topic. Ideas may be classified, segregated or synthesized

2. Surveys

- a. Key informants identification is purposely selected community members who are able to provide the needed information. Individuals with experience on the particular concerns should be selected.
- b. Semi-structure interview is conversation with a purpose. It involves a set of guidelines or discussion points. As the interview goes along, the facilitator can raise new questions on matters that arise during the interview. Information is not limited to the set of guide questions prepared by the facilitator.
- c. Semi-structure interview is a way of generating information by providing opportunity to probe the answers of the respondents, discuss new issues that may arise during the interview and get clear and accurate answers on the personal experiences of the respondents.
- d. The types of question asked are: i) descriptive; ii) structural; iii) contrast (comparison); and, iv) probing (deeper questions).
- e. Group interviews are advantageous. The group can have more control over the discussion and provide opportunity for dialogue among the participants.

3. Mapping

- a. Village transects – series of observations while walking in a village. The transect method allows direct observation and cross check of information previously gathered in the community. It allows a friendly atmosphere with the respondents because of the informal approach and interaction. The transect method provides opportunities to get sensitive issues (illegal fishing etc) that may not be gathered in formal settings.

The types of information gathered using the transect methods are classified as follows:

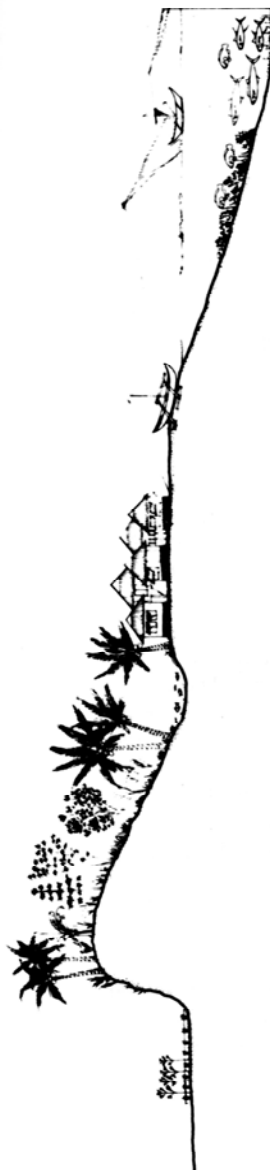
- i) Bio-physical – topography, hydrology, soil type, geology, forestry, agriculture, aquatic resources. Environmental conditions (erosions, cutting of mangroves etc) can also be observed and recorded. Endangered species (sea grass beds) can also be observed.
- ii) Resource use can also be observed such types of agriculture, aquaculture systems, plants that are used by the community etc.
- iii) Socioeconomic conditions of the community can easily be observed in terms of types of houses, fishing gears, livelihood activities as well as sanitary facilities (water, toilet etc).
- b. Resource mapping – method of collating and plotting information that allows the
- c. Researchers and community members to identify, locate and classify past and present resource occurrence, distribution, use and tenure on the occurrence of resources in a community. It shows the relation between information set and its location to establish visual relations between resources and use or issues. Resource mapping is also a complementary tool in doing village transects.

Some of the resources or issues that can be reflected in a resource map are:

- i) habitats i.e. mangroves, coral reefs, sea grass beds, wetlands, forest, rivers etc
- ii) aquaculture areas; fishing grounds
- iii) breeding grounds, migration routes

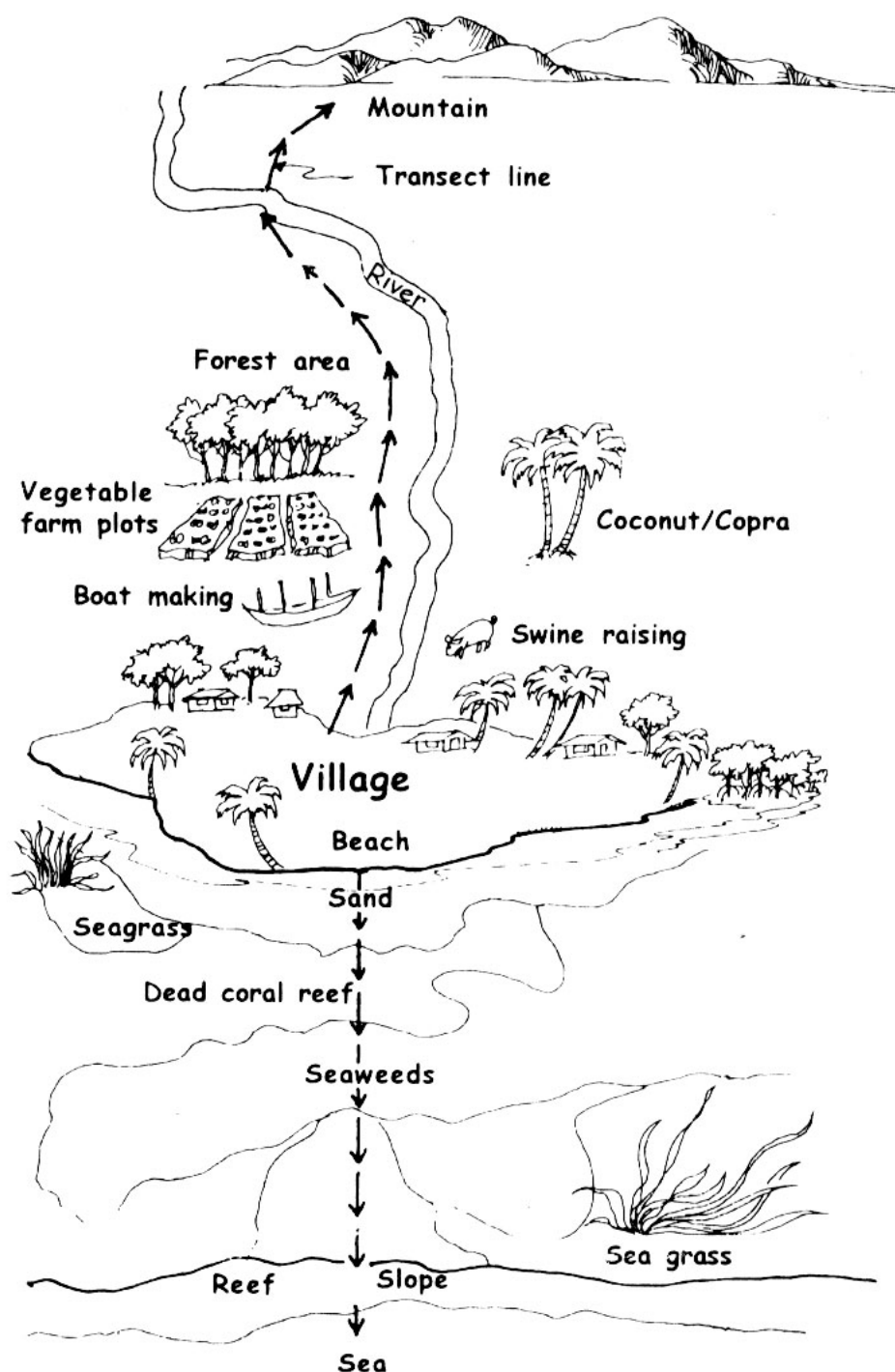
- iv) resource use (agriculture, fish culture, livestock etc)
- v) resource access, limitations and conflicts
- vi) use rights and tenure

The map reflects the perception and vision of the participants about the resources. It provides visual representation and use of resources.



Resource system	Lowland/canal (juma)	Upland/forest (bulid)	Midland	Lowland/shippond	Lowland/village	Shoreline (luga)	Seashore (baraya)	Coast reef (bakura)	Open sea (dayat)
Soil	black clay	redish-black rocky city	redish-black gravelly clay	sand (barat)	sand	sand, rocky			
Water	spring	spring	spring	ground water	pipe from spring				
Crops	rice, cassava, pineapple, passion fruit, castor bean	black myrtle tree	black myrtle tree		cassava, sweet potato, eggplant, corn, tomato, chili, bitter melon, mung bean, squash, (Majapahit)	seaweed	seaweed		
Trees	lucania guava, black myrtle tree	coconut, star apple, papaya, banana, sugar apple, lucania, (Majapahit)	coconut, star apple, jackfruit, black myrtle tree, guava, sugar apple, mango, banana, star apple, lucania						
Forage, etc.	wire (for hut)	grass, ferns (commercial), pitcher plant	guava, bamboo, pitcher plant, ferns	weeds					
Animals	carabao, chicken	chicken	chicken	turkey	chicken, turkey, pig	native oyster, brown mussel, oyster			
Other activities	salt making (dayat)	Department of Environment and Natural Resources (DENR) substitution	rice hut making			artisanal collection, excavation of sand and gravel	shell gathering	shell gathering	shell gathering
Problems or threats	saline intrusion (dayat)	soil erosion, deforestation	soil erosion, deforestation						
Opportunities	rice hut, culture, mangrove farming	charcoal making		livestock technology development and management, rice or mung bean farming, fish or mackerel culture					

Fig. 6. Agrofishery transect of Malilison Island. (from a joint SEAFDEC/ICLARM Rapid Rural Appraisal Training, September 1991).



- i) like typhoons or drought;
 - ii) fishing and fish activities (daily, lunar days, stocking, feeding, harvesting, illegal fish activities such as use of dynamite, cyanide)
- social and political activities (parties, elections)

4. Activity calendars

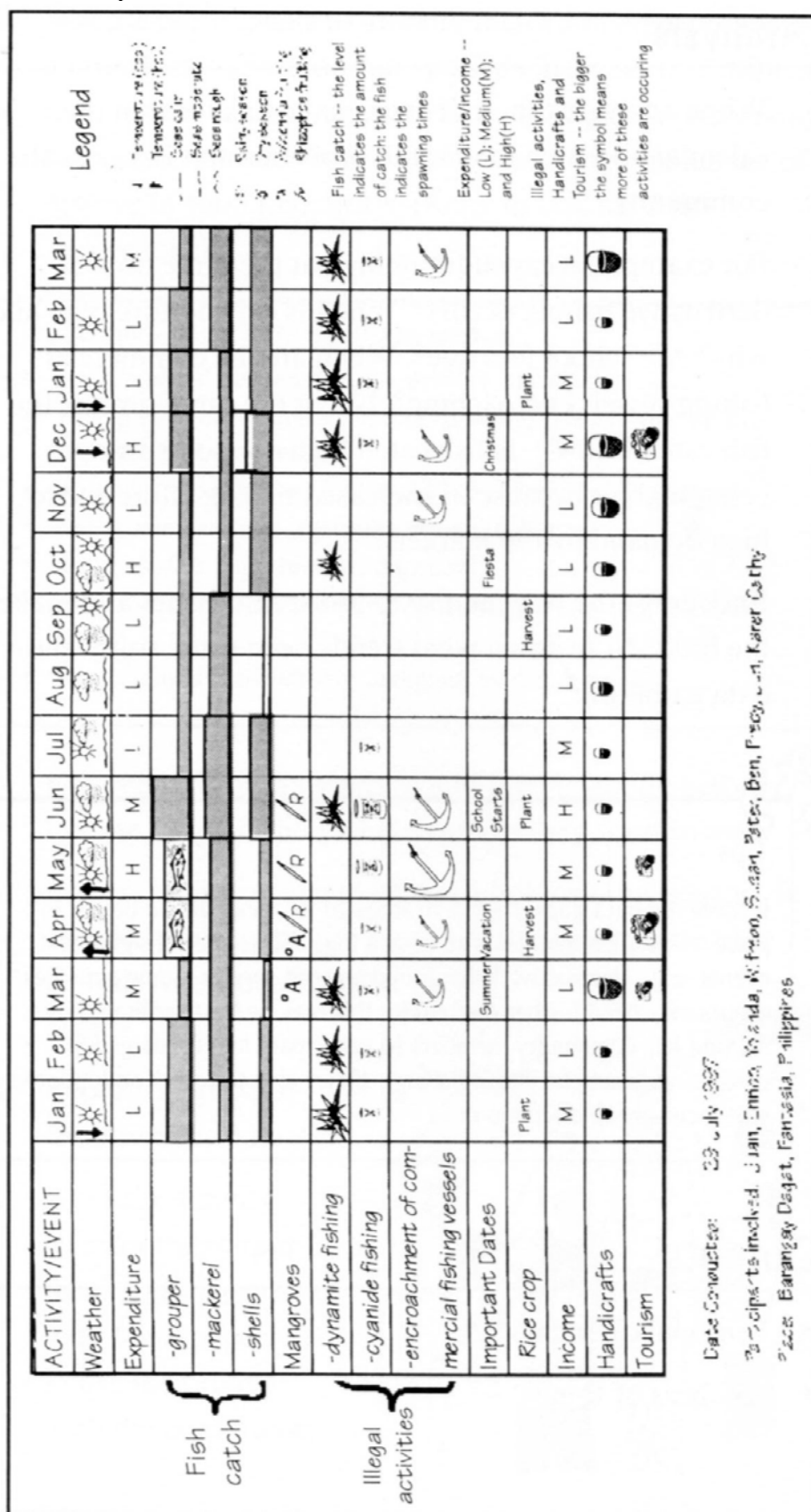
- a. Seasonal calendar - shows the weather, social activities, economic activities, and other important occurrences (diseases, school activities)

The activities and events that could be used are:

- iii) environmental conditions – weather
- iv) n, religious etc)
- v) other livelihood activities (carpentry, trading etc)

The outputs of this method are a seasonal calendar and analysis of trends of fishing, fish farming and other important economic activities. It is easy and quick to prepare and comprehensive that includes socioeconomic, political, and environmental issues.

An example of a seasonal calendar



- b. Daily activity – a tool in recording and knowing the daily activities of the respondents both productive and reproductive, including community activities and social activities. This is helpful in preparing seasonal calendars and historical timeline. It also identifies the daily activities of the different sectors of the community such as fishermen, women, children etc. This is a useful tool in determining whether a community member can participate in a cooperative activity such as aquaculture livelihood and coastal resources management.

The output of this exercise is a visual representation of typical daily activities of a member of a community. It also provides information on how the different segments of the community use and management their time.

Sample output



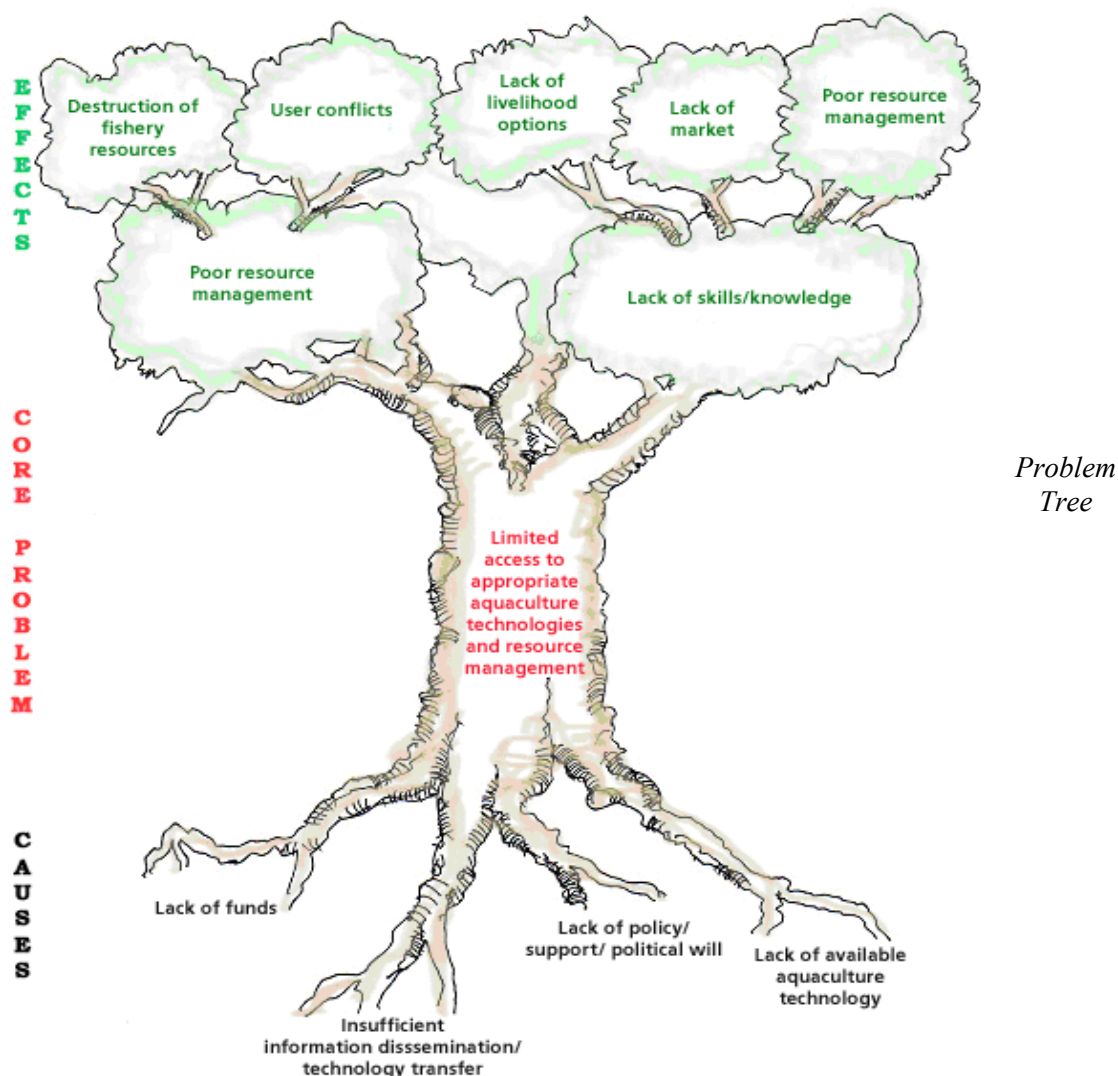
5. Problem tree analysis

Problem tree analysis is a tool in project planning also called situation analysis. It looks into the causes of a central problem and the effects or consequences in the target community where a project is being planned.

Here are some of the advantages of this tool:

- Real and present issues are identified and dealt with;
- The problem can be broken down into manageable components which enable a clearer prioritization of issues that has to be addressed in the planning and implementation of a project.
- There is a better understanding of the problems because of the interconnectedness of cause and effects.
- It identifies the issues and arguments of the constituents and establishes who are the main players and political actors and processes in each stage.

- e. It can establish what further information, evidence or resources are needed to make a strong recommendation or actions to be taken.
- f. The process of analysis often helps build a shared sense of understanding, purpose and action.



Analysis: Antique Province

ORGANIZING PRA

A typical PRA team includes the facilitator (team coordinator or leader), interdisciplinary researchers, and representatives from the community for two to three weeks on workshop discussions, analyses, and fieldwork. Several organizational aspects should be considered:

1. Logistical arrangements should consider nearby accommodations, food, sufficient vehicles, field notebooks, portable computers, supplies such as flip chart paper and markers.
2. Training of team members may be required.
3. PRA results are influenced by the length of time allowed to conduct the exercise, scheduling and assignment of report writing, and critical analysis of all data, conclusions, and recommendations.
4. A PRA covering relatively few topics in a small area (perhaps two to four communities) should take between ten days and four weeks, but a PRA with a wider scope over a larger area can take several months. Allow 2-3 days for an introductory workshop if training is involved.

5. Field work reports are best written immediately. A preliminary report should be available within a week or so of the fieldwork, and the final report should be made available to all participants and the local institutions that were involved.

SEQUENCE OF TECHNIQUES

PRA techniques can be combined in a number of different ways, depending on the topic under investigation. Some general rules of thumb, however, are useful. Mapping and modeling are good techniques to start with because they involve several people, stimulate much discussion and enthusiasm, provide the PRA team with an overview of the area, and deal with non-controversial information. Maps and models may lead to transect walks, perhaps accompanied by some of the people who have constructed the map. Wealth ranking is best done later in a PRA, once a degree of rapport has been established, given the relative sensitivity of this information.

The current situation can be shown using maps and models, but subsequent seasonal and historical diagramming exercises can reveal changes and trends, throughout a single year or over several years. Preference ranking is a good icebreaker at the beginning of a group interview and helps focus the discussion. Later, individual interviews can follow up on the different preferences among the group members and the reasons for these differences.

